



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/813,759	03/21/2001	Hiroshi Yagi	OPS Case 526	2425

7590

06/04/2003

FLYNN, THIEL, BOUTELL & TANIS, P.C.
2026 Rambling Road
Kalamazoo, MI 49008-1699

EXAMINER

ZERVIGON, RUDY

ART UNIT

PAPER NUMBER

1763

DATE MAILED: 06/04/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/813,759

Applicant(s)

YAGI ET AL.

Examiner

Rudy Zervigon

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 17 March 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1-7, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bennin et al (USPat. 5,839,193) in view of Horiuchi (USPat. 6,093,476). Bennin teaches a method of manufacturing a laminate structure (10, Figure 3) load beam (32, Figure 4 – “wireless suspension blank”) as part of a head suspension assembly (“HAS”) for disk drives (column 1, lines 14-32; column 3, lines 56-65). Bennin further teaches a multi-layer laminate (10; Figure 3; column 7, lines 10-40) composed of a stainless steel metallic layer (50) with the “spring” property (column 7, lines 11-19) on one side of a polyimide insulating layer (90; column 7, lines 20-40), and a third metallic layer (70; column 8, line 23 - BeCu) wiring part. Bennin further teaches etching (column 7, lines 52-67) the stainless steel metallic layer by wet etching using ferric chloride including double-sided etching (column 8, lines 5-9). Bennin further teaches metallic plating a wiring part by electroplating (column 8, lines 48-55).

Bennin does not teach etching the stainless steel metallic layer by a photo etching method.

Bennin does not teach plating a wiring part by the semi-additive method.

Horiuchi teaches the manufacture of a wiring composite film (Figures 14-16) including etching a metallic layer (17) by a photo etching method (column 15, lines 50-56) and plating a wiring part by the semi-additive method (column 6, lines 11-17).

Art Unit: 1763

It would have been obvious to one of ordinary skill in the art at the time the invention was made for Bennin to etch the stainless steel metallic layer by a photo etching method, and plate a wiring part by the semi-additive method as taught by Horiuchi.

Motivation for Bennin to etch the stainless steel metallic layer by a photo etching method, and for plating a wiring part by the semi-additive method as taught by Horiuchi is to etch the stainless steel metallic layer and plate the wiring part by alternate means as taught by Horiuchi to provide dimensional accuracy (column 2, lines 2-3).

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bennin et al (USPat. 5,839,193) and Horiuchi (USPat. 6,093,476) in view of Mallon (USPat 5,628,869). Bennin and Horiuchi are discussed above. Bennin and Horiuchi do not teach a specific electrode configuration for plasma processing (column 41, lines 12-24). Mallon teaches a both convex and concave electrode configurations for plasma processing (Figures 3-5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for Bennin and Horiuchi to use Mallon's electrode for plasma processing.

Motivation for Bennin and Horiuchi to use Mallon's electrode for plasma processing is drawn to wafer topography requirements (column 3, lines 1-18).

Response to Arguments

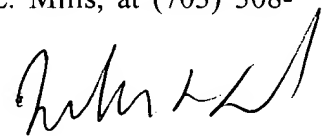
4. Applicant's arguments, see paper 10, filed March 17, 2003, with respect to the rejection of claims 1-10 under 35 USC 102 and 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration,

Art Unit: 1763

a new ground(s) of rejection is made in view of Bennin et al (USPat. 5,839,193) and Horiuchi (USPat. 6,093,476).

Conclusion

1. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (703) 305-1351. The examiner can normally be reached on a Monday through Thursday schedule from 8am through 7pm. The official after final fax phone number for the 1763 art unit is (703) 872-9311. The official before final fax phone number for the 1763 art unit is (703) 872-9310. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (703) 308-0661. If the examiner can not be reached please contact the examiner's supervisor, Gregory L. Mills, at (703) 308-1633.



**JEFFRIE R. LUND
PRIMARY EXAMINER**